

Development of Fiqh Learning Design Based on Ecotheological Integration and Digitalisation at MIN 4 Pontianak Timur

Sulpikar¹, Wahab²

^{1,2} Institut Agama Islam Negeri Pontianak - Indonesia

*Corresponding author : sulpikar3197@gmail.com

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Article	Abstract
<p>Article History : Received : Dec, 05, 2025 Reviewed: March, 05, 2026 Accepted : May, 07, 2026 Published : May, 21, 2026</p> <p>Keywords: <i>Learning design, Fiqh, Ecotheology, Digitalisation, MIN 4 East Pontianak</i></p>	<p>This study was motivated by the conventional, teacher-centred approach to teaching Fiqh, which has yet to integrate ecological awareness and optimal use of digital technology. The aim of the study was to develop a Fiqh teaching design based on eco-theological integration and digitalisation at MIN 4 Pontianak Timur that is relevant to the challenges of the 21st century. The research used the Research and Development (R&D) method with the ADDIE (Analysis, Design, Development, Implementation, Evaluation) development model. The research subjects included 44 fifth-grade students and three expert validators. The results of the study show that the developed learning design achieved a feasibility level of 80.21% from expert validation and a student response of 79.85%, including the categories 'Feasible' and 'Good'. From the results of observations and tests, there was a proven increase in students' understanding of Fiqh concepts and the growth of environmental awareness. The novelty of this research lies in the systematic integration of eco-theological values with digital technology in Fiqh learning, creating more contextual and meaningful learning. The implications of this research provide practical contributions for Islamic Education teachers in designing innovative learning that develops students' cognitive, affective, and environmental awareness competencies holistically.</p>

INTRODUCTION

Currently, many environments around us have suffered damage and disasters caused by human behaviour due to a lack of awareness of the relationship between humans and their natural environment. Damage to marine and terrestrial ecosystems is caused by humans' failure to recognise the necessity of maintaining balance and responsibility in their interactions with nature (Mahmud, 2024). This condition shows that awareness, values, and moral guidance are essential in shaping human behaviour. As stated in Article 1 point 6 of Law No. 23 of 1997, the environment is a unity of space with all objects, forces, conditions, and living things, including humans and their behaviour, which affect the continuity of life and the welfare of humans and other living things (Arazid et al, 2024).

In this regard, Islamic religious education (IRE) should be instilled from an early age within the family environment. Parents have the primary responsibility for instilling good habits and preventing children from engaging in inappropriate behaviour at home. In line with this, educational institutions also play a role in providing religious education at various levels. This means that parents need to be more selective in choosing educational institutions for their children. However, the main objective of religious education remains the same, namely to shape the character of students who are faithful and able to practise the religious teachings taught at school.

Religious education is intended to enhance spiritual potential and shape students to become people who are faithful and devoted to God Almighty and have noble character. Noble character includes ethics, manners, and morals as manifestations of religious education. The enhancement of spiritual potential includes the introduction, understanding, and instilling of religious values, as well as the practice of these values in individual and collective social life. The enhancement of spiritual

potential ultimately aims to optimise the various potentials possessed by humans, the actualisation of which reflects their dignity and worth as creatures of God (Laksono, 2022).

Islamic religious education in primary schools not only serves to teach religious teachings, but can also serve as a means of internalising moral and ethical values, including responsibility for the environment. The Qur'an and hadith explicitly teach the importance of maintaining the balance and sustainability of the earth. In this context, the integration of ecological values in Islamic religious education can be interpreted as an effort to link religious teachings with environmental awareness (Wildan, 2024).

Ecology-based learning integration is one form of learning that can be applied by Islamic Religious Education teachers in schools (Ridwan, 2023). Learning integration is a learning activity that utilises various resources and materials in a learning process. In this case, it is ecology-based learning integration in fiqh lessons. This means that Islamic Religious Education is carried out by utilising the surrounding environment. For example, learning material on almsgiving can be implemented by utilising the surrounding environment.

Ecological Islamic religious education is a form of religious education that incorporates environmental elements. This is a form of learning that is implemented to shape the character of students as people who are aware of the environment, whether through preaching or other means. Not only that, after the learning process takes place, an evaluation of learning will certainly be carried out. At this stage, educators assess the results of the students' work. There are two types of assessment, namely tests and non-tests, so that educators can determine the extent to which students understand and accept information during the learning process. The assessment is not only cognitive, but also affective and psychomotor, which are also assessed in the learning evaluation.

Islamic Religious Education (IRE) is an effort to instil and internalise the values of character education, including environmental awareness. Previous research by Fahham (2012) emphasised the importance of integrating IRE with ecological education through 'green schools', so that pupils not only understand Islamic teachings cognitively but also internalise and practise them as a way of life. Several other studies also indicate that ecology-oriented religious education can foster an environmentally conscious character and strengthen students' empathy towards nature.

However, preliminary findings at MIN 4 Pontianak Timur suggest that Fiqh instruction remains conventional, with minimal active student engagement and limited use of technology. This situation highlights a gap between the ideal of an integrative-ecological IRE and the reality of teaching practices on the ground, which have yet to respond to the demands of 21st-century education that prioritises innovation, emotional engagement, and contextual relevance.

This study constitutes a synthesis of previous research. Whilst earlier studies primarily highlighted the theoretical importance of integrating ecological values into Islamic Religious Education (IRE), this study concretely develops an applicable, eco-theology-based and digitalised Fiqh learning design. Thus, this study not only confirms Fahham (2012) ideas but also addresses the methodological and practical limitations of previous research, which has not yet offered many innovative learning models based on technology and environmental sustainability.

The main contribution of this research lies in the presentation of a transformative, collaborative and contextual learning model, which reinforces environmental values whilst fostering critical and reflective thinking amongst students. Fiqh was chosen because its worship-related content is most directly linked to daily practices, making it easy to connect with ecological responsibilities, such as thaharah and water conservation.

Pedagogically, Fiqh enables the integration of eco-theological values through problem-based learning, reflection, and the cultivation of concrete actions that foster environmental awareness in a contextual manner. Theoretically, this research enriches the discourse on IRE grounded in eco-theology, whilst practically providing guidance for IRE educators in designing innovative and holistic learning experiences.

RESEARCH METHOD.

This study utilises a mixed methods approach with research and development (R&D) designed to produce a comprehensive understanding of Fiqh learning design based on eco-theological integration and digitalisation. The mixed methods approach was chosen because it integrates quantitative and qualitative data, resulting in higher validity, reliability, and objectivity compared to single methods (Schoonenboom & Johnson, 2017). The strategy used is sequential explanatory, where quantitative data from expert validation and test results are analysed first, then qualitative data from observations and interviews are used to explain, deepen, and contextualise the findings (Creswell, 2014, 2015).

This sequential blended learning strategy aligns with the ADDIE model, as quantitative validation and test results are utilised during the implementation and evaluation stages, whilst qualitative observations and interviews explain why the design was successful and how it enhanced the learning process. Thus, the ADDIE model provides a development framework, whilst the sequence of blended learning methods provides evidence and explanations for each stage. This model is developed cyclically and iteratively, so that evaluation results at each stage serve as input for continuous improvement. The analysis stage identifies learning needs through observation, interviews, and document reviews. The design stage devises a conceptual framework that integrates eco-theological values, interactive digital learning, and instructional design with higher-order thinking skills (HOTS). The development stage produces concrete outputs: Lesson Plans (RPP), Student Worksheets (LKPD), digital learning media, and assessment instruments. The implementation phase involved 44 Year 5 pupils at MIN 4 Pontianak Timur through a pilot study comprising 8–10 learning sessions, supported by participatory observation to record learning dynamics. The evaluation phase was conducted both formatively and summatively to measure the effectiveness of the design through expert validation, pre- and post-tests, observation, and pupil feedback questionnaires.

Data collection instruments included: (1) an expert validation questionnaire with a 5-point Likert scale to assess material, design, and evaluation aspects; (2) a structured observation sheet measuring the learning process, student activities, and internalisation of eco-theological values; (3) a pre-post oral test with 5-7 open-ended questions to measure student understanding; and (4) a student response questionnaire with a 4-point Likert scale. Quantitative data analysis used descriptive percentage statistics with eligibility criteria of 81-100% (highly eligible), 61-80% (eligible), and so on. Qualitative analysis used the Miles and Huberman procedure with progressive thematic coding. Data validity was ensured through data source triangulation and method triangulation, ensuring that the research findings were valid, reliable, and comprehensive.

Measurement tools, observations and questionnaires are fairly effective in detecting early changes in cognitive, affective and psychomotor aspects, but are not yet entirely adequate for measuring long-term internalisation. Therefore, research findings need to be supplemented with repeated observations, behavioural records and student reflections to ensure that changes in attitudes towards the environment are more valid.

RESULT AND DISCUSSION

Analysis of the Validity and Feasibility of Fiqh Learning Design Based on Ecotheological Integration and Digitalisation

Table 1. Expert Validation Results

Design Validator	81,55 %
Evaluation Validator	79 %
Expert Validator	80,21%

Source: data processing 2025

Table 2. Student Responses

Number of Respondents	44 Students
Percentage of average score	79, 85 %
Category	good

Sumber: data processing 2025.

The expert validation results of 80.21% and student responses of 79.85% indicate that the Fiqh learning design based on eco-theological integration and digitalisation developed at MIN 4 Pontianak Timur is in the 'Suitable' and 'Good' categories. This achievement has strong methodological significance in the context of research and development. According to educational product feasibility standards, a percentage above 75% indicates that the developed product has met the criteria for construct validity, content validity, and practical validity (Sugiharto & Hadi, 2021). However, the gap of 0.36% between the expert validator's assessment and the students' responses suggests a difference in perspective between theoretical expectations and empirical experience in the field.

This difference can be explained through the Pedagogical Content Knowledge (PCK) theory, which emphasises that the effectiveness of learning is not only determined by the technical quality of the design, but also by the teacher's ability to transform the design into meaningful learning practices (Hasan & Hadi, 2024). In the context of MIN 4 Pontianak Timur, expert validation tends to assess theoretical-conceptual aspects such as the completeness of design components, conformity with instructional design principles, and the systematic integration of eco-theological values. Meanwhile, student responses more reflect their subjective experiences in participating in learning, which are influenced by contextual factors such as technological readiness, digital literacy skills, and a conducive classroom climate.

These findings are similar to the results of research by Odegaard et al., (2020), which states that digital learning designs have comparable or even better effectiveness than conventional learning, but their success greatly depends on the suitability of the technology, learning objectives, and assessment methods used. In the context of Fiqh learning, the integration of digital technology is not merely a tool for delivering material, but a medium of transformation that enables students to experience more interactive, contextual, and meaningful learning (Sousa et al., 2022). This reinforces the argument that the learning design developed is not only technically valid but also pedagogically relevant to the context of madrasah ibtidaiyah in the digital era, which is now increasingly developing and demanding adaptation efforts from various studies, learning, facilities, and the skills of teachers and students.

Ecotheological Integration: Theological and Pedagogical Foundations in Fiqh Learning

The integration of eco-theological values into Fiqh learning is a fundamental effort to build ecological awareness based on Islamic spirituality among primary madrasah students. Islamic eco-theology is based on three intertwined fundamental concepts: *tauhid* (awareness of the oneness of Allah as the Creator of the universe), *khalifah fil ardh* (humans as stewards of the earth), and *amanah* (moral responsibility to maintain ecological balance). These concepts are not merely normative teachings, but operational principles that must be internalised in every aspect of life, including in the practice of worship taught in Fiqh lessons.

In the context of learning at MIN 4 Pontianak Timur, eco-theological integration is implemented through problem-based learning focused specifically on natural disasters, particularly floods. When studying *thaharah* (purification), students not only learn the procedural steps of *wudhu*, but also reflect on how flood disasters result from water mismanagement and environmental neglect. They connect the Islamic prohibition of *israf* (wastefulness) with real-world issues like excessive water use and clogged drainage that contribute to flooding. This process moves beyond cognitive memorisation into affective-spiritual reflection, where students realise that caring for the environment and preventing disasters like floods is an integral part of worshipping Allah. (Laksono, 2022; Subkan, 2025; Wildan, 2024).

This approach is in line with the concept of *fiqh al-bi'ah* (environmental jurisprudence) developed by contemporary scholars in response to the global ecological crisis. According to Mahmud (2024), Fiqh learning that integrates ecological insights enables students to understand that Islamic law is not static, but dynamic and responsive to socio-ecological realities. In this study, fifth-grade students at MIN 4 Pontianak Timur showed a significant increase in environmental awareness, which manifested itself in concrete behaviours such as disposing of rubbish in its proper place, conserving water and electricity, and maintaining classroom cleanliness on a regular basis. These behaviours were not the

result of normative indoctrination, but rather the internalisation of values that occurred through a contextual and meaningful learning process.

Furthermore, the integration of eco-theology in Fiqh learning also has profound pedagogical implications. Learning is no longer centred on the teacher as the sole source of knowledge (teacher-centered), but rather on the student as an active subject who constructs their own understanding (student-centered). Through group discussions, environment-based projects, and critical reflection, students are encouraged to think critically, collaborate with peers, communicate effectively, and develop creativity in finding solutions to environmental problems. These four skills are the main pillars of 21st-century learning that students must master in order to face global challenges (Armianti, 2024).

The Role of Digitalisation in the Transformation of Fiqh Learning in Madrasah Ibtidaiyah

The digitisation of Fiqh learning at MIN 4 Pontianak Timur is not merely an adoption of technology, but a fundamental transformation of the pedagogical paradigm. Digital technology serves as a cognitive tool that expands students' thinking capacity, facilitates access to diverse learning resources, and creates an interactive and collaborative learning environment (Timotheou et al., 2022). In this study, the digital platforms used included interactive learning applications such as Quiz, CapCut and Canva. The Quiz application was chosen because it allows teachers to incorporate interactive questions into lessons, transforming the learning process from passive to active. Furthermore, educational videos based on Islamic values were produced in an engaging and easily understandable manner using the CapCut and Canva applications, as both are user-friendly.

The effectiveness of digitisation in Fiqh learning can be explained through the Cognitive Theory of Multimedia Learning (CTML), which states that humans process information through two main channels: verbal and visual. The integration of these two channels in digital media allows students to construct richer and deeper mental representations of the material being studied (Khaldi et al., 2023). For example, when learning the procedures for prayer, students not only read texts or listen to lectures from teachers, but also watch demonstration videos, use simulation applications, and discuss through digital forums. This multimodality increases knowledge retention and facilitates the transfer of learning from the school context to everyday life.

The findings of this study are consistent with the results of a meta-analysis conducted by Alshammary & Alhalafawy (2023), which showed that digital platforms significantly improve student learning outcomes, particularly in terms of motivation, active engagement and independent learning. In the context of MIN 4 Pontianak Timur, digital platforms were utilised through a problem-based learning procedure with specific steps: (1) the teacher presented a Fiqh learning video on taharah that had been embedded with interactive questions; (2) students watched the video independently and answered questions within the video; (3) students accessed an interactive quiz to assess their understanding of taharah and water conservation; (4) students discuss in groups to design solutions to flooding problems based on eco-theology materials; (5) students present the results of their discussions via educational social media. This change reflects a transformation from passive-receptive learning patterns to active-constructive learning, which is a hallmark of effective learning in the 21st century (Bereczki & Karpati, 2021).

However, the digitisation of learning also presents challenges that cannot be ignored. The technological infrastructure gap, limited digital literacy among teachers, and the risk of digital distraction are obstacles that must be overcome through systematic and comprehensive policies (Heap et al., 2020; Valverde et al., 2021). In this study, these obstacles were overcome through intensive training for teachers, the provision of adequate digital devices, and the development of technical guidelines for the use of technology in learning. These efforts ensure that digitisation is not just a buzzword, but is optimally implemented in everyday learning practices.

Previous studies have largely focused on the normative integration of ecology into Islamic Religious Education (IRE), but have not yet formulated an operational and digital model of fiqh based on eco-theology. This study addresses this gap by developing a learning design, implementation steps and evaluation specifically tailored to the context of primary madrasahs.

The Dynamics of Implementing the ADDIE Model in Learning Design Development

The ADDIE model (Analysis, Design, Development, Implementation, Evaluation) is a systematic framework that has proven effective in developing quality learning designs. In the context of this study, each stage of ADDIE was carried out iteratively and integratively, where the evaluation results at each stage became feedback for improvements in the next stage. This cyclical approach ensures that the developed product is not only theoretically valid but also practically relevant to the context of MIN 4 Pontianak Timur (Niswatin et al., 2022).

In the Analysis stage, researchers conducted an in-depth needs assessment through observation, interviews, and documentation studies. The main findings at this stage were that Fiqh learning at MIN 4 Pontianak Timur was still conventional, teacher-centred, and did not integrate ecological and digital technology dimensions. This analysis forms the basis for designing learning that is responsive to student needs and the demands of 21st-century learning. The Design stage focuses on designing a conceptual framework that integrates eco-theological values with the principles of digital learning. This design includes the formulation of learning objectives, the selection of strategies and methods, and the development of holistic assessment instruments (Sugiharto & Hadi, 2021).

The Development stage is a crucial phase in which conceptual designs are transformed into concrete learning products, including Lesson Plans (RPP), Student Worksheets (LKPD), digital learning media, and evaluation instruments. These products are then validated by three expert validators consisting of experts in Fiqh, learning design, and evaluation. This validation process is essential to ensure that the products meet academic and practical quality standards. The validation results show a score of 80.21%, indicating that the products are suitable for use with minor revisions as suggested by the validators (Hasan & Hadi, 2024).

The implementation stage is a real test of the effectiveness of the learning design that has been developed. At this stage, the design was implemented in real learning in class V MIN 4 Pontianak Timur, involving 44 students. Observations showed that students were more active in discussions, creative in completing environment-based projects, and enthusiastic in using digital media. These changes reflect a transformation in classroom ecology from a traditional passive pattern to a modern interactive and participatory pattern. Teachers act as facilitators who guide students in constructing their own knowledge, rather than as transmitters of knowledge in a one-way manner (Choi et al., 2022).

The evaluation stage is conducted formatively and summatively. Formative evaluation is carried out at each stage of development to make continuous improvements, while summative evaluation is carried out after implementation to measure the overall effectiveness of the product. The evaluation results show that the developed learning design is able to improve students' understanding of Fiqh material, foster an attitude of caring for the environment, and encourage active participation in learning. Thus, the ADDIE model has proven to be effective as a framework for developing a learning design that is systematic, iterative, and responsive to contextual needs (Drugova et al., 2021).

Holistic Impact on Students' Cognitive, Affective, and Psychomotor Competencies

The implementation of Fiqh learning design based on eco-theological integration and digitalisation at MIN 4 Pontianak Timur has produced a holistic impact covering three areas of competence: cognitive, affective, and psychomotor. In the cognitive domain, students showed significant improvement in their understanding of abstract and concrete Fiqh concepts. Problem-based learning and the use of digital media facilitated students to think critically, analyse Sharia arguments, and formulate legal conclusions relevant to the contemporary context (Junaidin, 2025). These higher-order thinking skills are a key indicator of the success of learning oriented towards 21st-century competencies (Udeozor et al., 2023).

In the affective domain, the integration of eco-theological values in Fiqh learning fosters students' spiritual awareness that protecting the environment is a mandate from Allah and an integral part of worship. Local values such as *Nggahi Rawi Pahu* (keeping promises), *Maja Labo Dahu* (shame and fear of doing wrong), and *Ngaha Aina Ngoho* (social responsibility) can be used as contexts in problem-based learning to internalise students' religious character and moral responsibility (Feriyadin

et al., 2024; Hermawansyah, 2025; Junaidin, 2025). Through reflection and group discussions, students not only understand cognitively but also internalise spiritual values in concrete actions, such as caring for the cleanliness and sustainability of the school environment. This transformation in attitude demonstrates a more contextual and meaningful learning of Fiqh, where religious norms are actualised through living ecological and social experiences. Students show empathy for environmental issues, such as pollution, deforestation, and climate change, and take the initiative to take concrete actions in their daily lives (Mahmud, 2024).

In the psychomotor domain, students demonstrate concrete behaviours that reflect the internalisation of the values they have learned. Observations show that students consistently dispose of rubbish in its proper place, conserve water when performing ablutions, turn off lights and fans when leaving the classroom, and actively participate in greening and school environmental clean-up activities. These behaviours are not the result of external coercion, but rather an expression of character that has been formed through a meaningful learning process. This is in line with the concept of character education, which emphasises that effective character education must simultaneously integrate the dimensions of knowledge (knowing), attitude (feeling), and action (acting) (Ridwan & Haris, 2021; Ridwan, 2023).

Furthermore, this holistic impact also reflects the integration of 21st-century skills known as the 4Cs: critical thinking, creativity, communication, and collaboration. Students are not merely passive consumers of knowledge, but active producers who are able to construct their own understanding, communicate their ideas effectively, collaborate with peers in solving problems, and develop creativity in finding innovative solutions to environmental issues. These skills are fundamental assets that the younger generation must possess in order to face the complexity of global challenges in the future (Hasumi & Chiu, 2022; Trevisan et al., 2023).

Theoretical and Practical Implications for the Development of Islamic Education Learning in Madrasahs

The findings of this study have significant theoretical and practical implications for the development of Islamic Religious Education (IRE) in general, and Fiqh learning in particular, in madrasah ibtidaiyah. Theoretically, this study enriches the literature on innovative learning designs that simultaneously integrate theological, ecological, and technological dimensions. The integration of these three dimensions is a creative response to the challenges of education in the 21st century, which demands learning that is not only oriented towards content mastery but also towards holistic character building and life skills (Fernandez et al., 2020).

In practical terms, this study provides a concrete model that can be adapted by Islamic Education teachers in various madrasah contexts. The ADDIE model used in this study has proven to be effective as a systematic framework for developing valid, reliable, and practical learning designs. Teachers can adapt this model by conducting contextual needs analyses, designing responsive learning designs, developing appropriate materials and media, implementing participatory approaches, and conducting continuous evaluations to improve quality. This cyclical process ensures that IRE learning does not stagnate but continues to evolve in line with changing student needs and the demands of the times (Songkram et al., 2023).

In addition, this study also shows the importance of developing the digital competence of IRE teachers. The digitisation of learning requires not only adequate technological infrastructure, but also teachers who are competent in integrating technology pedagogically. Therefore, continuous training, intensive mentoring, and communities of practice for IRE teachers are essential to ensure that the digitisation of learning can be implemented optimally and sustainably. Without this systematic support, digitisation will become nothing more than a buzzword with no real impact on the quality of learning (Amemasor et al., 2025; Valverde et al., 2021).

This study emphasises that Islamic Religious Education (IRE) in the digital age must transcend the paradigm of knowledge transmission and move towards a paradigm of character transformation. Islamic Religious Education is not only about teaching normative teachings, but also about shaping

individuals who are faithful, knowledgeable, virtuous, and caring towards others and the environment. In the context of an increasingly acute global ecological crisis, the integration of eco-theological values into Islamic Religious Education is an inevitability that can no longer be postponed. The younger generation of Muslims must be equipped with the awareness that protecting the environment is an integral part of faith and worship, not merely a legal obligation (Bibri et al., 2023).

CONCLUSION

The development of fiqh learning design based on eco-theological integration and digitalisation at MIN 4 Pontianak Timur has proven to be effective and suitable for use in primary school learning processes. Through the systematic ADDIE stages, this design has succeeded in improving students' understanding of fiqh material, with expert validation results reaching 80.21% and student responses reaching 81.55%. This learning model not only integrates cognitive aspects of religion but also fosters environmental awareness and strong spiritual character. Students showed significant improvement in environmentally friendly behaviour, such as disposing of rubbish in its proper place, conserving water and electricity, and maintaining classroom cleanliness on a regular basis.

Further research is recommended to test similar learning models in various schools with different geographical and social backgrounds in order to obtain more generalised results. More in-depth exploration is needed on the integration of more varied digital technologies and the measurement of the long-term impact on changes in student character behaviour. Multiparty collaboration between education agencies, environmental communities, and families is also highly recommended so that the results of development are more applicable and sustainable in creating a young generation that is religious and cares about the environment.

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